

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
21 May 2004 (21.05.2004)

PCT

(10) International Publication Number
WO 2004/042484 A3

(51) International Patent Classification⁷: **B67D 5/08**

(21) International Application Number:
PCT/US2003/034471

(22) International Filing Date: 30 October 2003 (30.10.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/423,342 4 November 2002 (04.11.2002) US

(71) Applicant (for all designated States except US): **GRACO MINNESOTA INC.** [US/US]; 60 11th Ave. N.E., Minneapolis, MN 55413 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MCCORMICK,**

Martin [US/US]; 21830 Iden Avenue, Forest Lake, MN 55025 (US). **WEIKEL, William** [US/US]; 18046 87th Avenue North, Maple Grove, MN 55311 (US). **DENE-SON, Bret** [US/US]; 9166 Comstock Lane North, Maple Grove, MN 55311 (US). **LARSEN, David** [US/US]; 5475 Kalenda Drive, Albertville, MN 55301 (US).

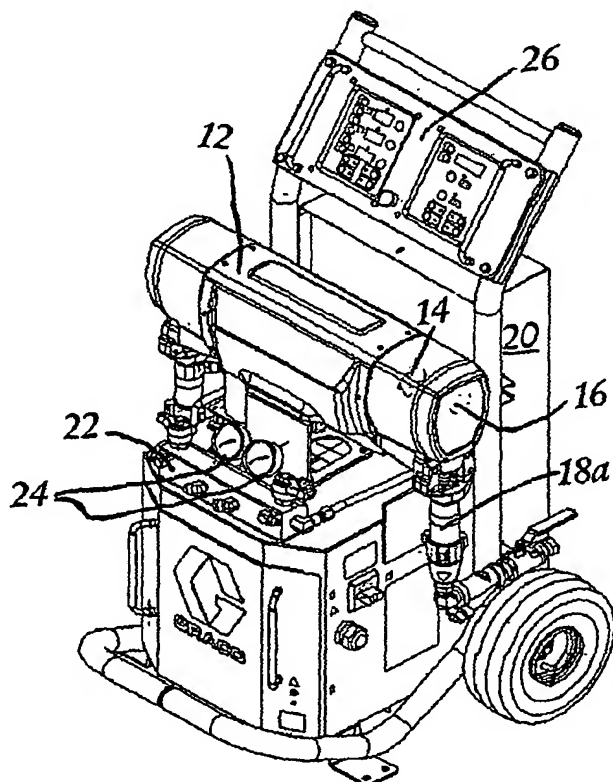
(74) Agent: **FARROW, Douglas**; GRACO MINNESOTA INC., 60 11th Ave. N.E., Minneapolis, MN 55413 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: **FAST SET MATERIAL PROPORTIONER**



(57) **Abstract:** The proportioner (10) has a variable speed controlled DC motor (12) having a gearbox (14) and crankshaft (16) at either end which are connected to reciprocating piston pumps (18). The outputs (18a) of the two pumps (18) are fed to a manifold (22) where the pressure of each output is measured. The user sets a setpoint pressure (e.g. 1000 psi) and the controller (26) then compares the pressures of the two components and controls the higher of the two relative to the setpoint. Ratio assurance is monitored by continuing to look at both output pressures. If one side falls below a predetermined percentage of the setpoint (50% in the preferred embodiment), an alarm may be raised or operation stopped.



Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:
8 July 2004

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.